

[0033] What is claimed is:

1. A method of creating a stable slurry of coated particulates wherein the slurry is capable of being stored for at least 2 hours before use comprising the steps of:
providing resin coated particulates wherein the resin comprises a resin that does not completely cure unless it is at least one of:
exposed to a temperature above about 175°F or
exposed to an external catalyst; and,
substantially slurrying the resin coated particulates in a servicing fluid to create a stable resin coated particulate slurry.
2. The method of claim 1 wherein the high temperature curable resin comprises a furan-based resin, a phenolic-based resin, a high-temperature (HT) epoxy-based resin, a phenol/phenol formaldehyde/furfuryl alcohol resin, or a combination thereof.
3. The method of claim 1 wherein the high temperature curable resin further comprises a hydrolyzable ester, a silane coupling agent, a surfactant, or a combination thereof.
4. The method of claim 1 where in the external catalyst comprises hydrochloric acid, phosphoric acid, acetic acid, fumaric acid, sulfonic acid, or combinations thereof.
5. The method of claim 1 wherein the servicing fluid comprises an aqueous gel, a foam, an emulsion, a crosslinked viscosified fluid, or a combination thereof.
6. The method of claim 1 wherein the high temperature curable resin is coated onto the particulates on-the-fly.
7. The method of claim 1 wherein the servicing fluid has an apparent viscosity (at a shear rate of 1) from about 40,000 cp to about 200,000 cp; a Maxwellian Stress Relaxation of from about 1 to about 3 minutes; and a Maxwellian Equilibrium Limit from about 0.035 to about 0.1.

8. A method of creating a stable slurry of coated particulates wherein the slurry is capable of being stored for at least 2 hours before use comprising the steps of:
providing tackifyer coated particulates; and,
substantially slurrying the tackifyer coated particulates in a servicing fluid to create a tackifyer coated particulate slurry.
9. The method of claim 8 wherein the tackifyer comprises a polyamide, a polyester, a polycarbonate, polycarbamate, a natural resin, or a combination thereof.
10. The method of claim 8 wherein the servicing fluid comprises an aqueous gel, a foam, an emulsion, a crosslinked viscosified fluid, or a combination thereof.
11. The method of claim 8 wherein the tackifyer is coated onto the particulates on-the-fly.
12. The method of claim 8 further comprising the step of:
combining the tackifyer coated particulates with a multifunctional material
before the step of:
substantially suspending the tackifyer coated particulates in a servicing fluid to create a tackifyer coated particulate slurry.
13. The method of claim 12 wherein the multifunctional material comprises and aldehyde; a dialdehyde; a hemiacetal; an aldehyde releasing compound; a diacid halide; a dihalide; a polyacid anhydride; an epoxide; furfuraldehyde, glutaraldehyde or aldehyde condensates; or combinations thereof.
14. The method of claim 8 wherein the servicing fluid has an apparent viscosity (at a shear rate of 1) from about 40,000 cp to about 200,000 cp; a Maxwellian Stress Relaxation of from about 1 to about 3 minutes; and a Maxwellian Equilibrium Limit from about 0.035 to about 0.1.

15. A method of propping a fracture in a subterranean formation comprising the steps of:
providing resin coated particulates wherein the resin comprises a resin that does not completely cure unless it is at least one of:

exposed to a temperature above about 175°F or

exposed to an external catalyst;

providing a fracturing fluid;

substantially slurring the resin coated particulates in a fracturing fluid to create a resin coated particulate slurry wherein the slurry is capable of being stored for at least 2 hours before use;

placing the resin coated particulate slurry into at least one fracture in the subterranean formation; and,

allowing the resin to substantially cure.

16. The method of claim 15 wherein the high temperature curable resin comprises a furan-based resin, a phenolic-based resin, a high-temperature (HT) epoxy-based resin, a phenol/phenol formaldehyde/furfuryl alcohol resin, or a combination thereof.

17. The method of claim 15 wherein the high temperature curable resin further comprises a hydrolyzable ester, a silane coupling agent, a surfactant, or a combination thereof.

18. The method of claim 15 where in the external catalyst comprises hydrochloric acid, phosphoric acid, acetic acid, fumaric acid, sulfonic acid, or combinations thereof.

19. The method of claim 15 wherein the fracturing fluid comprises an aqueous gel, a foam, an emulsion, a crosslinked viscosified fluid, or a combination thereof.

20. The method of claim 15 wherein the high temperature curable resin is coated onto the particulates on-the-fly.

21. The method of claim 15 wherein the subterranean formation exhibits a temperature at above about 175°F.

22. The method of claim 15 wherein the subterranean formation exhibits a temperature of below about 175°F and further comprising, after the step of placing the resin coated particulate mixture into at least one fracture in the subterranean formation, the step of:

placing an after-flush solution comprising an external catalyst into the subterranean formation.

23. The method of claim 15 wherein the fracturing fluid has an apparent viscosity (at a shear rate of 1) from about 40,000 cp to about 200,000 cp; a Maxwellian Stress Relaxation of from about 1 to about 3 minutes; and a Maxwellian Equilibrium Limit from about 0.035 to about 0.1.

24. A method of propping a fracture in a subterranean formation comprising the steps of:
providing tackifyer coated particulates;
providing a fracturing fluid;
substantially slurrying the tackifyer coated particulates in the fracturing fluid to
create a tackifyer coated particulate slurry wherein the slurry is capable of being stored for at least 2
hours before use; and,
placing the tackifyer coated particulate slurry into at least one fracture in the
subterranean formation.

25. The method of claim 24 wherein the tackifyer comprises a polyamide, a polyester, a polycarbonate, polycarbamate, a natural resin, or a combination thereof.

26. The method of claim 24 wherein the fracturing fluid comprises an aqueous gel, a foam, an emulsion, a crosslinked viscosified fluid, or a combination thereof.

27. The method of claim 24 wherein the tackifyer is coated onto the particulates on-the-fly.

28. The method of claim 24 further comprising the step of:
combining the tackifyer coated particulates with a multifunctional material
before the step of:
substantially suspending the tackifyer coated particulates in a servicing fluid to
create a tackifyer coated particulate slurry wherein the slurry is capable of being stored for at least 2
hours before use.

29. The method of claim 28 wherein the multifunctional material comprises and aldehyde; a dialdehyde; a hemiacetal; an aldehyde releasing compound; a diacid halide; a dihalide; a polyacid anhydride; an epoxide; furfuraldehyde, glutaraldehyde or aldehyde condensates; or combinations thereof.

30. The method of claim 24 wherein the fracturing fluid has an apparent viscosity (at a shear rate of 1) from about 40,000 cp to about 200,000 cp; a Maxwellian Stress Relaxation of from about 1 to about 3 minutes; and a Maxwellian Equilibrium Limit from about 0.035 to about 0.1.

31. A method of installing a gravel pack in a well bore comprising the steps of:
providing resin coated particulates wherein the resin comprises a resin that does not completely cure unless it is at least one of:
exposed to a temperature above about 175°F or
exposed to an external catalyst;
providing a gravel packing fluid;
substantially slurring the resin coated particulates in the gravel packing fluid to create a resin coated particulate slurry wherein the slurry is capable of being stored for at least 2 hours before use;
introducing the resin coated particulate mixture to the well bore such that the resin coated particulates form a gravel pack substantially adjacent to the well bore; and,
allowing the resin coated particulates to substantially cure.
32. The method of claim 31 wherein the high temperature curable resin comprises a furan-based resin, a phenolic-based resin, a high-temperature (HT) epoxy-based resin, a phenol/phenol formaldehyde/furfuryl alcohol resin, or a combination thereof.
33. The method of claim 31 wherein the high temperature curable resin further comprises a hydrolyzable ester, a silane coupling agent, a surfactant, or a combination thereof.
34. The method of claim 31 where in the external catalyst comprises hydrochloric acid, phosphoric acid, acetic acid, fumaric acid, sulfonic acid, or combinations thereof.
35. The method of claim 31 wherein the fracturing fluid comprises an aqueous gel, a foam, an emulsion, a crosslinked viscosified fluid, or a combination thereof.
36. The method of claim 31 wherein the high temperature curable resin is coated onto the particulates on-the-fly.
37. The method of claim 31 wherein the well bore exhibits a temperature at above about 175°F.
38. The method of claim 31 wherein the subterranean formation exhibits a temperature of below about 175°F and further comprising, after the step of introducing the resin coated particulate slurry to the well bore such that the resin coated particulates form a gravel pack substantially adjacent to the well bore, the step of
placing an after-flush solution comprising an external catalyst into the well bore.

39. The method of claim 31 wherein the gravel packing fluid has an apparent viscosity (at a shear rate of 1) from about 40,000 cp to about 200,000 cp; a Maxwellian Stress Relaxation of from about 1 to about 3 minutes; and a Maxwellian Equilibrium Limit from about 0.035 to about 0.1.

40. A method of installing a gravel pack in a well bore comprising the steps of:
providing tackifyer coated particulates;
providing a gravel packing fluid;
substantially slurrying the tackifyer coated particulates in the gravel packing fluid to create a tackifyer coated particulate slurry wherein the slurry is capable of being stored for at least 2 hours before use; and,
introducing the tackifyer coated particulate slurry to the well bore such that the tackifyer coated particulates form a gravel pack substantially adjacent to the well bore.
41. The method of claim 40 wherein the tackifyer comprises a polyamide, a polyester, a polycarbonate, polycarbamate, a natural resin, or a combination thereof.
42. The method of claim 40 wherein the fracturing fluid comprises an aqueous gel, a foam, an emulsion, a crosslinked viscosified fluid, or a combination thereof.
43. The method of claim 40 wherein the tackifyer is coated onto the particulates on-the-fly.
44. The method of claim 40 further comprising the step of:
combining the tackifyer coated particulates with a multifunctional material before the step of:
substantially suspending the tackifyer coated particulates in a servicing fluid to create a tackifyer coated particulate slurry wherein the slurry is capable of being stored for at least 2 hours before use.
45. The method of claim 40 wherein the multifunctional material comprises and aldehyde; a dialdehyde; a hemiacetal; an aldehyde releasing compound; a diacid halide; a dihalide; a polyacid anhydride; an epoxide; furfuraldehyde, glutaraldehyde or aldehyde condensates; or combinations thereof.
46. The method of claim 40 wherein the gravel packing fluid has an apparent viscosity (at a shear rate of 1) from about 40,000 cp to about 200,000 cp; a Maxwellian Stress Relaxation of from about 1 to about 3 minutes; and a Maxwellian Equilibrium Limit from about 0.035 to about 0.1.